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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,860	04/17/2001	James F. Kramer	IMMR057/00US	7509

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EXAMINER

WU, XIAO MIN

ART UNIT	PAPER NUMBER
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2674

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DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/837,860

Applicant(s)

KRAMER ET AL.

Examiner

XIAO M. WU

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 6-10 and 26-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-10 and 26-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/14/2004 has been entered.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 6-10, 26-28 and 33-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Holmes (US Patent No. 6,239,784).

As to claims 6, 10, Holmes discloses an apparatus, comprising: a deformable member (23, Fig. 2) having a first end, a second end (see Fig. 2), and intermediate portion (Fig. 2)), the intermediate portion of the deformable member having a contact side and a non-contact side; and a tendon (21, Fig. 2) configured to displace the first end of the deformable member relative to the second end in response to a signal, the contact side of the intermediate portion of the deformable

Art Unit: 2674

member configured to output a haptic sensation, the non-contact side (e.g. the inner side of the deformable member 23) of the intermediate portion being disposed between the contact side (e.g. the upper side of the deformable member 23) of the intermediate portion and the tendon (21)

As to claim 7, Holmes discloses the deformable member (23) is leaf spring.

As to claim 8, Holmes discloses the tendon pass through a guide member (20) fixed to one of the first end and the second end of the deformable member.

As to claim 9, Holmes discloses the deformable member is configured to provide a controllable kinesthetic force As to claim 10, Kramer discloses the deformable is configured to provide a tactile sensation (col. 5, line 57)

As to claim 26, Holmes discloses an apparatus, comprising: an actuator (33-35, Fig. 1), and a force mechanism (10, Fig. 1) coupled to the actuator, the forcing mechanism positionable on a support surface defining a plane, the forcing mechanism including: a contact surface (e.g. the upper side of the deformable member 23 as shown in Fig. 2) configured to provide a haptic sensation ; and means for moving (21, Fig. 2) the contact surface in a direction having at least one component outside of the plane defined by the support surface in response to the actuator, the mans for moving (21) being positioned such that the non-contact surface (e.g. the inner side of the deformable member 23) is disposed between the means for moving (21) and the contact surface (e.g. the upper side of the deformable member 23).

As to claim 27, Holmes discloses the contact surface is attached to flexible member (23).

As to claim 28, Holmes discloses the means for moving includes a tendon (20) attached to an extremity of the contact surface.

Art Unit: 2674

As to claim 33, Holmes discloses that the means for moving includes an inflatable member (21).

As to claim 34, Holmes discloses the contact surface includes a multi-point contact surface (13, 14, Fig. 1).

As to claim 35, Holmes discloses means for securing (22) the contact surface to an object able to receive the feedback force.

As to claim 36, Holmes discloses the contact surface includes a contact surface defining an opening to at least partially enclose an object (e.g. finger tip) able to receive the feedback force (see Fig. 1).

As to claim 37, Holmes discloses means for moving includes a plurality of forcing mechanisms (24, 26).

As to claims 38, 40, note the discussion of claim 26 above. Kramer further discloses a computer (911, Fig. 9) for controlling the force feedback system.

As to claim 39, Holmes discloses a graphical icon associated with the force feedback mechanism.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

Art Unit: 2674

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer (US Patent No. 5,184,319) in view of Burdea et al. (US Patent No. 5,354,162).

As to claim 29-32, it is noted that Holmes does not disclose that the means for moving includes a piston, a threaded rod or a cam or a telescoping member. Burdea is cited to teach an actuator system provides force feedback for a hand similar to Homes. Burden teaches that the actuator includes means for moving which are pistons (80a, 80b, 80c, Fig. 4) and piston rod (82a, 82b, 82c, Fig. 4). The piston of Burdea is also a telescoping member. It would have been obvious to one of ordinary skill in the art to have modified Holmes with the feature of piston for moving a finger as taught by Burdea because it is an alternative way to use different mechanism for moving the finger. Further it would have been obvious to use cam as a moving means for moving a finger because the cam can substitute for the piston.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 6-9 and 26-40 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiao Wu whose telephone number is (703) 305-4721.

Art Unit: 2674

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9306**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377

xw

May 31, 2004



**XIAO WU  
PRIMARY EXAMINER  
ART UNIT 2674**